Abstract Submitted
for the APR18 Meeting of
The American Physical Society

Compact binary merger rates using mass and spin models DANIEL WYSOCKI, RICHARD O'SHAUGHNESSY, Rochester Inst of Tech — LIGO and Virgo have observed a handful of compact binary mergers – binary black holes and binary neutron stars – and measured their masses and (vector) spins. From the standpoint of population statistics, the two most interesting measurables are the merger rate and the mass & spin distribution. Since our detection efficiency varies as a function of mass and spin, the rates inferred from the data are sensitive to the mass & spin distribution. However, that distribution is also unknown, and needs to be determined from the data. Here we present work which jointly infers the mass & spin distributions – restricted to a parameterized family of models – along with rates, using a fully coherent Bayesian approach.

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Date submitted: 10 Jan 2018 Electronic form version 1.4